MEMORANDUM FOR YOON I. CHANG, INTERIM DIRECTOR
ARGONNE NATIONAL LABORATORY

JOHN H. MARBURGER, DIRECTOR
BROOKHAVEN NATIONAL LABORATORY

WILLIAM J. MADIA, DIRECTOR
OAK RIDGE NATIONAL LABORATORY

CHARLES V. SHANK, DIRECTOR
LAWRENCE BERKELEY NATIONAL LABORATORY

LURA J. POWELL, DIRECTOR
PACIFIC NORTHWEST NATIONAL LABORATORY

THRU: ROBERT L. SAN MARTIN, MANAGER
CHICAGO OPERATIONS OFFICE

G. LEAH DEVER, MANAGER
OAK RIDGE OPERATIONS OFFICE

CAMILLE YUAN-SOO HOO, MANAGER
OAKLAND OPERATIONS OFFICE

KEITH A. KLEIN, MANAGER
RICHLAND OPERATIONS OFFICE

FROM: JAMES F. DECKER, ACTING DIRECTOR
OFFICE OF SCIENCE

SUBJECT: Strategic Facilities Plans for Achieving Laboratories of the 21st Century

A modern, effective and efficient physical infrastructure is of critical importance to maintaining the capability of the Office of Science's (SC) multiprogram Laboratories to continue world-class scientific research into the twenty first century. To better address infrastructure modernization needs in support of the missions of SC and the Department of Energy, I am requesting the development and submission of a Strategic Facilities Plan for each multiprogram laboratory.

These 10-year Plans should focus on fully modernizing the SC multiprogram Laboratories to a vision that we refer to as the "Laboratories of the 21st Century." I need your help in further developing this vision but, generally, it should include addressing existing and expected infrastructure deficiencies; correcting site layout and development problems (including site clean-up, as appropriate); achieving recognition of the Laboratory as a preferred working environment; and removing,

replacing and upgrading non-functional buildings and equipment to modern standards and anticipated mission needs over the next 10 years. A proposed vision is given in the Attachment. I urge each Laboratory to engage its senior program managers to help define the infrastructure goals and improvements needed to support current and anticipated program activities.

The Plans will interpret the vision as it applies to each Laboratory's site and related facilities and will identify the roadmap of activities and resources needed to achieve this vision including line item construction (by year) and levels of effort for other construction (i.e., GPP), general purpose equipment and maintenance. It is SC's goal to accomplish full modernization of our multiprogram Laboratories by 2012. Accordingly, the Laboratories should assume a planning horizon of 10 budget years – FY 2002 through FY 2011. The Plans should assume that operating funding for each Laboratory will grow by no more than inflation during this period though mission mix may change substantially. New unique scientific user facilities such as the Advanced Photon Source should be identified, but not described in detail because they are planned in other forums. Similarly, other new non-SC facilities should be identified but not described in detail.

I have asked John Yates, Director, Laboratory Infrastructure Division (SC-82), to work with your staff and the SC research Program Offices via an SC Infrastructure Working Group to address and resolve the questions and issues that will arise in developing these Plans. This group is to help in further defining the vision and preparing guidance for developing the Plans (see Attachment for additional details).

I will need these Plans by September 29, 2000, to help support our planning and budgeting activities for the FY 2002 budget. I expect that these Strategic Plans will be updated periodically as major changes may dictate and that Institutional Plans will reflect annual adjustments to the Plans based on changing priorities and funding availability. I also plan to ask the Working Group to develop metrics to help us measure our success in achieving full modernization of our Laboratories.

Thank you for your assistance in this important effort which, I believe, is critical to the continued viability of the SC multiprogram Laboratories.

Attachment

cc: w/attachment
F. Crescenzo, CH-BHO
R. Wunderlich, CH-AAO
G. Malosh, ORO-X10
R. Nolan, OAK-BSO
P. Kruger, RL-R&D

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SROSSI	JYATES	JTURI	JMETZLER	MJOHNSON	PDEHMER	JDECKER
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Attachment

Strategic Facilities Plans for Achieving Laboratories of the 21st Century

Background

A modern, effective and efficient physical infrastructure is of critical importance to maintaining the capability of the Office of Science's (SC) multiprogram Laboratories to continue world-class scientific research into the twenty first century. These Laboratories have a strong tradition of providing first-of-a-kind enabling discoveries and technologies that drive national advances and advantages. SC multiprogram Laboratories explore the farthest reaches of the universe and the smallest subatomic particles in the national service. These are dynamic scientific institutions that continuously focus on advancing the knowledge that underpins and powers the nations evolving "technology" revolutions and ensures our national and economic security and environmental integrity. To better address infrastructure modernization needs in support of the missions of SC and the Department of Energy, SC is requesting the preparation of a Strategic Facilities Plan for each multiprogram Laboratory. These 10-year Plans focus on fully modernizing the SC multiprogram Laboratories to a vision that we refer to as the "Laboratories of the 21st Century."

Proposed Vision for Laboratories of the 21st Century (When "Modernization" is Completed):

- **Mission:** The Laboratories' facilities and infrastructure will be adequate to accommodate each Laboratory's expected programmatic mission activities and technological changes well into the 21st Century. Facilities will be "right-sized" to the kind and quality of space needed to meet mission needs. Activities and organizations that need to be co-located will be. Facilities will be readily adaptable to changing research requirements and technologies. Off-site leased space will be minimized. (It is assumed for planning purposes that total mission activities will grow by no more than inflation during this period though mission mix may change substantially.)

- **Working Environment:** The Laboratories will achieve a research campus with a quality of facilities that provide a "preferred" working environment for our researchers and that help attract new employees. The laboratories will employ the latest advances in information technology to enhance worker productivity, interactions with other scientists and the advancement of science. Visiting scientists will have access to adequate quality accommodations and research support facilities.

- **Environment, Safety, Health and Security:** The Laboratories' facilities and infrastructure will provide a safe, healthy and secure working environment for Laboratory employees and visitors that is also stimulating and nurturing. Retired facilities will be removed and environmental clean-up will be completed.

- **Operations and Maintenance:** Facilities and infrastructure will be efficient to operate and maintain.

Requirements for New Construction and Facilities Modifications

It is SC's goal to accomplish full modernization of its multiprogram Laboratories by 2012. In developing a roadmap of activities and resources needed to accomplish the above proposed vision, Laboratories should assume a 10-year budget planning horizon (i.e., FY 2002 through FY 2011). Also, all new construction and facilities modifications and improvements included in the roadmap will:

- Provide for flexibility, e.g, interior design facilitates the dynamic changes in the scientific programs associated with the site; versatility, e.g, interior space/layout is adaptable, with minimal modification and relocation, for new programs and personnel; durability and longevity, e.g., construction materials and technology used will yield structures with a lifetime greater than 50 years without major renovation.

- Incorporate state-of-the-art sustainable design principles regarding selection of building materials and furnishings, construction techniques, energy and water conservation, habitability features, etc., where economically feasible.

- Ensure that the proposed investments yield what the Laboratory considers to be a significant high rate of return (e.g., > than 10%) and help reduce operating and maintenance costs.

Process for Development of Plans

It is expected that a rigorous process will be used to develop the activities and resources needed to accomplish the vision and develop the roadmap of activities and resources needed. An example process is given below.

a. Integrate Organization Goals into the Capital Decision-Making process.

- Conduct a comprehensive assessment of needs to meet results-oriented goals and objectives in DOE Program Plans, other strategic plans and Institutional Plans.
- Identify current capabilities, including the use of an inventory of assets and their condition.
- Determine the gap between the capacity of current assets and needed capabilities.
- Decide how best to close the gap by identifying and evaluating alternative approaches including non-capital approaches and third-party funding.

b. Evaluate and Select Capital Assets Using an Investment Approach

- Establish review and approval framework supported by analysis.
- Rank and select projects based on established criteria.
- Assess investments as a portfolio.
- Use an executive review committee (and Decision Support software as appropriate) to make selections.
- Develop measurable goals and performance metrics.

The last item, measurable goals and performance metrics, will be very important in conveying progress in meeting our modernization goals. The Working Group has been asked to develop metrics to help measure success in achieving full modernization of the Laboratories. Each Operations Office and associated Laboratory is asked to propose metrics for its Laboratory consistent with the final vision statements established by the Working Group (the 4 proposed vision statements are given above).

Change indicators will also be developed to show the current situation versus post modernization. Possible change indicators include: number of buildings, number of trailers, and Laboratory footprint (current versus post modernization in all three cases). Please propose additional change indicators that might be useful in showing the charges modernization will effect.

Schedule, Format and Content

The final Plans are to be submitted by September 29, 2000. It is expected that the Plans will be relatively short – 30 pages or less. Strategic Plans will be updated as major changes at the Laboratory may dictate and that Institutional Plans will reflect annual adjustments to the Plans based on changing priorities and funding availability. Additional guidance on detailed schedule, format and content of Plans will be developed by the SC Infrastructure Working Group.

SC Infrastructure Working Group

Includes representatives from SC-82, SC landlord programs (Offices of Basic Energy Sciences, High Energy Nuclear Physics and Biological and Environmental Research), SC multiprogram Laboratories and the five site offices. Contact: John Yates, SC-82 (w: 301-903-8435; E-mail: john.yates@science.doe.gov) for more information. Observers from other SC Laboratories, other SC field or Headquarters offices and other parts of DOE will be welcomed.